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Berliner Balanced Scorecard: Employee Perspective

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Berliner Balanced Scorecard:

The Employee Perspective

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Berliner Balanced Scorecard: The Employee Perspective
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The 'Berliner Balanced Scorecard' approach demonstrates that the perspectives of the Balanced Scorecard are linkable and that each of them can be calculated. At the same time, the approach faces the challenge to quantify human resource capital.

1 Introduction

Today, within the era of globalisation, the recognition and evaluation of intangible assets according to IAS/IFRS or rather of human capital is on the agenda, at least since January 1st, 2005. Nevertheless, human resource accounting is a rather young research area, which still has to prove itself. In practice this is considered as a challenge. Business teams in companies are beginning to face this finance – and capital market-oriented as well as personnel management task.

Currently, the working group 'Intangible Assets in Accounting' of the Schmalenbach-Gesellschaft für Betriebswirtschaft e.V. is demanding an 'Intellectual Property Statement' in order to complete the companies' annual report. Especially for the 'Human Resource Capital' a number of indices, useful for investors, is required. Background is the consideration of human capital as a value driver, which is responsible for the company's success and market capitalisation.

For that reason, different initiatives have been founded in order to develop evaluation standards and – methods for human resource capital, which are widely applicable. Unfortunately, the success is not apparent, yet.

Within the internal accountancy the entry and evaluation of intangible assets respectively human capital is voluntarily as far as they do not support an external assessment.

A first thought is that the single development measures in the field of education are reviewed by means of a dynamic capital budgeting method. Cash flow calculations that correspond to the shareholder value approach are conceivable. Those can serve as a basis for the evaluation of intangibles within the balance sheet.

Of course, the whole instrument is integrated into the educational controlling:
The process of educational controlling consists of several phases, taking place one after another. The single steps of planning, guiding and controlling may be described as follows:

- To set qualitative and quantitative objectives within the educational planning
- Determination of the actual and the target output of a specific employee group with an identified training need,

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- Determination of the qualitative and quantitative divergence of the output of the investigated work group,
- Analysis of the 'bad performance' from the perspective of employees, superior, employee representative committee, personnel department and management,
- To plan training measures and budgets (content, method, trainer, place, documents etc.),
- To conduct the measures (implementation),
- To evaluate the measures (to form indices and develop instruments, which enable an economical and educational analysis),
- To determine new target values for the work group in order to asses, within the scope of a permanent educational controlling, if the educational investment was profitable (f. ex. by means of a dynamic capital budgeting) and if the expenses amortize at least under consideration of opportunity cost.

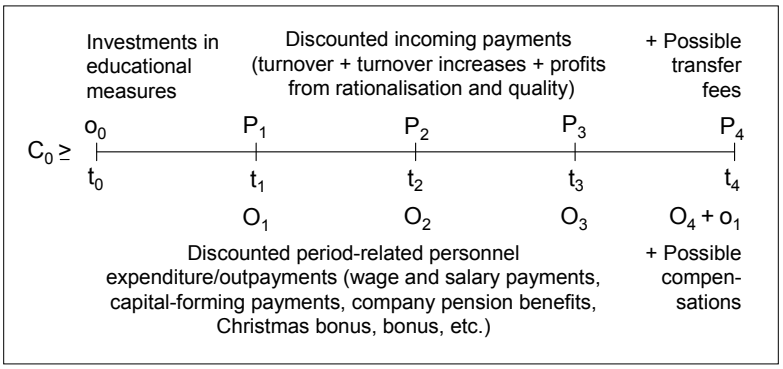


Figure 1: *Result checking of the educational controlling from the view of human resource accounting as well as from an investment-oriented perspective*

One approach, which should be followed in connection with the dynamic capital budgeting and which might be able to bring together the internal and external accounting within the scope of educational controlling, is the 'Berliner Balanced Scorecard' approach.[1] This approach is propagated by the Competence Centre of the University of Applied Sciences (FHTW) Berlin. It shows that all perspectives of the Balanced Scorecard can be linked to techniques, instruments and indices of the financial controlling. At the same time, any pyramid of indices to strive for can be developed for each single perspective. In the following, this is shown for the potential and employee perspective. The Berliner Balanced Scorecard approach is index-linked through a corporate appraisal approach in the sense of the shareholder value.

By setting the profit contribution and cash flow of employees in relation to the educational investment, it can be controlled if the educational investments in the employees are profitable.

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2 Determination of the Employee Profit Contribution

In the following, the employee profit contribution for a defined period of time is determined by means of contribution accounting. A service providing company serves as example. Initially, the sales revenue that is achieved by a defined employee group (department, branch etc.) is entered. Afterwards, the revenue reductions (such as discount) are subtracted in order to calculate the net revenue. Subsequently, the different cost positions are subtracted step by step from the net revenue.

Employee profit contribution in a service providing company			
-	Sales revenue by employees Revenue reductions		
=	Net revenue by employees		Net revenue by employees
		- - - -	Wages/salaries Times absent Employee turnover Employee suggestion system
		=	Employee profit contribution I
		- - - -	Cost of subcontractor Cost of material Direct administration and distribution costs (without personnel costs) Interest and similar expenses
		=	Employee profit contribution II
		- -	Administration and distribution costs (without personnel costs) Other
		=	Employee profit contribution III

Figure 2: *Calculation of the employee profit contribution*

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2.1 Interpretation of the Employee Profit Contribution

Since the employees' profit contribution I only includes cost positions that directly result from personnel placement, this profit contribution openly shows, which part of the revenue would not have been achieved without the employee placement. Because of the detailed classification of the personnel cost components of a service providing company, factors, which do not generate turnover, such as times absent or employee turnover, can be identified. In order to countersteer by means of controlling, the reasons have to be analysed. Another field of application turns out, if the personnel department of a company is considered as independent personnel service provider. In that case, the determined personnel costs (if necessary including profit mark-up) represent the settlement prices for other divisions of the company. Moreover, they directly illustrate the contribution of the personnel department and the total proceeds achieved by the company.

The employee profit contribution II arises after subtraction of the direct costs that are needed for the generation of services.

Finally, the employee profit contribution III results after deduction of the overhead costs, which cannot be imputed directly to the assignment. However, especially within the service sector a direct attribution of the remaining overhead costs by means of activity-based costing[2] is possible and reasonable, since the personal costs are already allocated in this way, as shown above.

The employee profit contribution may be used to support the strategic planning, since it reveals starting points to increase the company's profitability.

The profitability of an employee varies over the cycle of his employment. Usually, in the beginning of an employment the relation between turnover and costs does not fulfil the expectations, f. ex. because of the training period or training measures. Due to experience and learning effects,[3] this relation typically reverses and profit is gained within subsequent phases of employment. Therefore, while interpreting the figures the phase of the employment has to be taken into consideration. Otherwise, wrong decisions will be made that may result in a hastily dismissal because of negative profit contributions. A possible solution in order to increase the profit contributions is the introduction of flexible working hours. Through an optimised personnel placement planning, which considers variations in workload, expensive overtime and extra pay as well as times of unproductiveness are avoidable.

In addition, while interpreting the employee profit contributions of a service provider, the current and future demand of the market, the sphere of competition and the overall economic environment has to be considered.

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2.2 Projection to the Employee Cash Flow

In order to calculate the employees' cash flow, the scheme of the profit contribution calculation can be used. However, the liquidity-related components are in the focus. Revenues adjusted by revenue reductions are affecting payment anyway. This is not unrestrictedly valid for costs. Therefore, cost components on a value basis, such as depreciations and reserves have to be extracted. For a determined period of time considerable differences between liquidity-related costs and costs on a value basis may consequently occur.

Figure 3 gives an overview about the detailed determination of the employees' cash flow.

In order to calculate the employees' cash flow, the revenue reductions are subtracted from the sales revenue. The result is the net revenue. In a next step, the personnel costs are subtracted. Costs that are not affecting payment, which are already deducted within the corresponding cost element, such as depreciations and pension reserves, are eliminated by addition. Direct and overhead costs are treated in the same way. Eventually, the payments resulting from investments are subtracted, providing that the payment was affected within the period under consideration. Referring to the personnel sector, especially the investments into personnel development have to be considered. They result from single cost positions such as payments for times absent, travelling costs or charges for seminars. Furthermore, there should not be a time lag between incoming payment and revenue, which is the case for sales with payment target or received prepayments. In the case of sales with payment target, the surplus of the incoming payment is lower than the cash flow. In the case of prepayments it is the other way round. A time lag between outpayment and expense, f. ex. in the case of purchase on credit or prepayments to suppliers, has to be taken into account, too. In the case of prepayments to suppliers the surplus of the incoming payment is again lower than the cash flow.[4]

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Employee-Cash-Flow-Calculation			
- 	Sales revenue by employees Revenue reductions		
=	Net revenue by employees	 - - - - +	Net revenue by employees Wages/salaries Times absent Employee turnover Employee suggestion system Personnel costs not affecting payment, f. ex. depreciations, pension reserves
		=	Payment-related employee profit contribution I
		- - - - +	Cost of subcontractor Cost of material Direct administration and distribution costs (without personnel costs) Interest and similar expenses Direct costs not affecting payment
		=	Payment-related employee profit contribution II
		- - +	Administration and distribution costs (without personnel costs) Other Overhead costs not affecting payment
		= -	Payment-related employee profit contribution III Investment-related payments
		=	Employee cash flow

Figure 3: *Employee-Cash-Flow-Calculation*

2.3 Capital Budgeting-related Summary to the Potential Value of Employees respectively Human Resource Capital

The calculated, period-related employee cash flows form the series of payment for the capital budgeting. In order to determine the human capital value, a proceeding of the dynamic capital budgeting, the capital value method is used. This method calculates the present value, whereby the future employee cash flows respectively the difference between incoming payments and outpayments are discounted to the present time at a calculatory interest rate.[5]

The formula to calculate the human capital value (HCV)/Potential Value (PV) is the following:

$$PV = p_0 - o_0 + (p_1 - o_1) * (1+i)^{-1} + (p_2 - o_2) * (1+i)^{-2} + ... + (p_n - o_n) * (1+i)^{-n}$$

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with:

p_t: predicted employee-specific incoming payments within the period t
o_t: predicted employee-specific outpayments within the period t
i: calculatory interest rate
t: period (t = 0, 1, 2,…, n)
n: duration of the business relation.

In the following, the determination of the calculatory interest rate is considered more in detail.



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Determination of the calculatory interest rate

In order to determine the present value, the predicted cash flows have to be discounted at a suitable calculatory interest rate. Since the human capital value represents one part of the company's capital value, the methods of corporate appraisal and of the assessment of investment projects are useful.[6] To fulfil the requirements of the investor, the weighted average cost rate of capital (WACC) may be used as minimum interest rate. The weighted average cost of capital are calculated as follows[7]:

$$WACC = c_{EC} * \frac{EC}{EC+DC} + c_{DC} * (1-t) * \frac{DC}{EC+DC}$$

with: c_{EC}: cost of equity capital EC: equity capital t: tax rate
c_{DC}: cost of debt capital DC: debt capital

The cost rate of equity capital can be determined on the basis of the capital asset pricing model (CAPM),[8] which aims at establishing a risk-adjusted yield claim for any capital investment.[9]

The cost of equity capital is composed as follows:

Cost of equity capital = risk-free interest rate + risk premium of the equity capital
Risk-free interest rate = 'real' interest rate + expected inflation rate
Risk premium = Beta * (expected market yield – risk-free interest rate).

The risk premium of the market represents the additional remuneration that investors demand in order to invest in the company instead of choosing a 'secure' investment.[10] To determine the cost rate of debt capital, the average of all costs of debt capital within the planning period should be employed.

2.4 Possible application and interpretation of the results

Due to the detailed acquisition of the personnel costs, which encompass a loin's share within a service providing company, the intangible components are identified and evaluated monetarily. In that way it can be analysed, how far certain costs of the personnel department caused revenues. Already in the planning phase it can be examined, if the intended measures bear a reasonable relation to the expected benefit. Moreover, the data are useful to evaluate current personnel configurations in the sense of a stock analysis.

The development of intangible assets, such as the establishment of a brand or the education of an employee, is not regarded as balance-sheet investment, yet. Nevertheless, it is possible to carry out an (internal) capital budgeting-based evaluation by means of the explained model. The shown potential – respectively human capital value enables both the evaluation of the building of intangible assets and the prediction of the related attainable future surplus of incoming payments. Furthermore, the expected results might be consulted for defining the performance targets and controlling the achievement.

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3 Hierarchy of indices of the potential perspective 'employees'

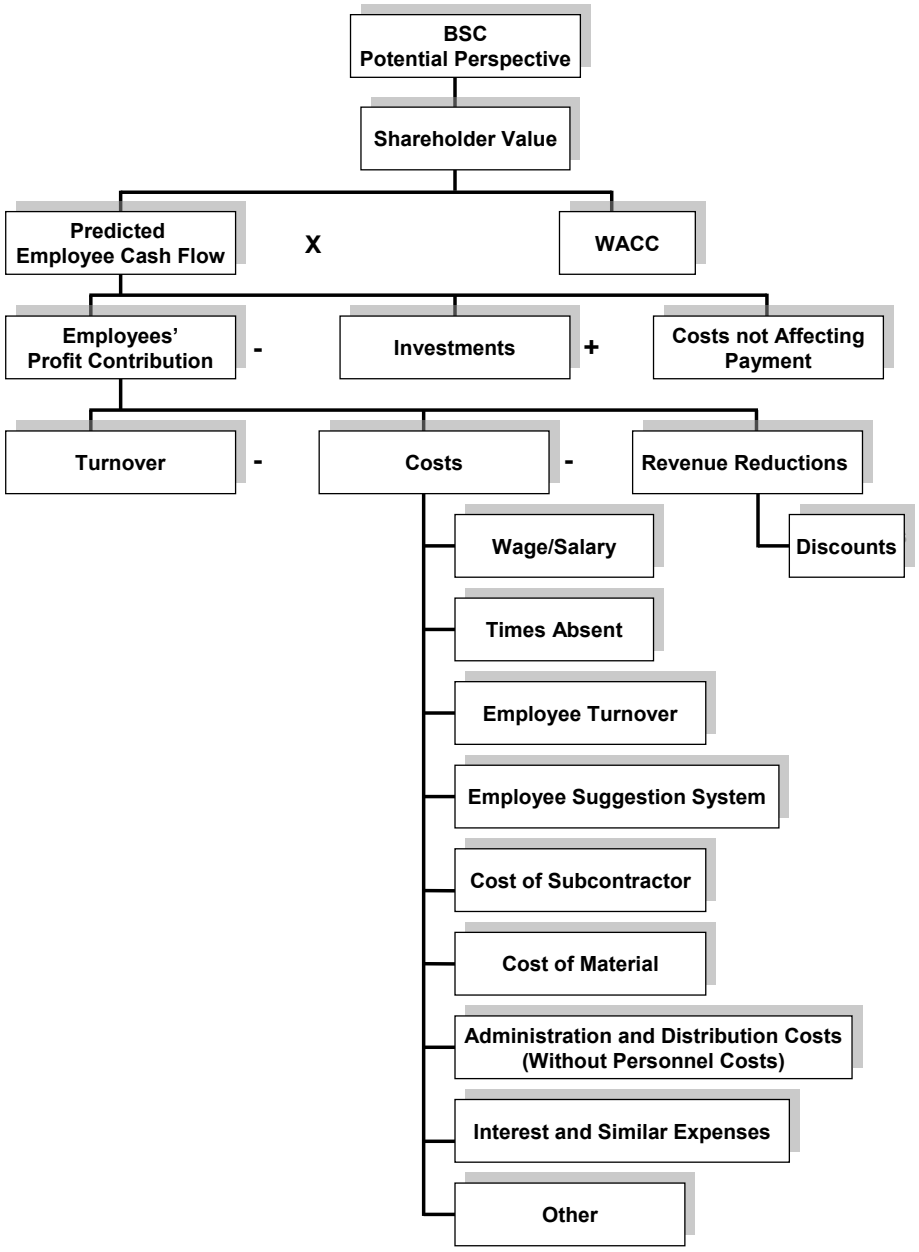


Figure 4: *Hierarchy of indices of the potential perspective*

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The hierarchy of indices of the customer perspective portrays the connection between the perspectives of the Balanced Scorecard und the created shareholder value. If the single perspectives of the BSC are considered as business sectors of a company, it becomes obvious that the sum of the predicted cash flows represents the calculation basis for the shareholder value, which is composed as follows according to Rappaport:[11]

	Present value of the company cash flows
+	Present value of the residual value
+	Market value of the securities quoted on the stock exchange
=	Company value
-	Market value of the debt capital
=	Shareholder Value

Subsequent to the calculation of the employee profit contribution the costs that do not affect payment are added and the investments are subtracted in order to gain the employee cash flow. With regard to the potential perspective of the Balanced Scorecard, especially investments in the personnel development/ educational development are to consider, even if these investments are entered as expenses and consequently cannot be evaluated from the capital budgeting perspective. Here, this part of the costs is consciously assigned to the investment field in order to stress that especially the further education represents an investment in the future of the whole company.



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Afterwards, the employee cash flows for a defined period of time are predicted and multiplied with the weighted average cost rate of capital (WACC).

The prediction of the employee cash flows is done by the following formula:

$$\frac{ECF_{t0}}{\frac{\sum_{t=-1}^{n} ECF_t * (1+d)^{-t}}{n}}$$

ECF = Employee Cash Flow
t = single period of the planning phase from 0 to n
$(1+d)^{-t}$ = discount factor of the period t respectively n.

With the above-mentioned formula, a factor that expresses the current performance of the employees is determined. This factor, based on the employee cash flow, can be used as system of measurement to predict the increase of the future surplus of incoming payments. The factor may be formed by relation of the current employee cash flow to the discounted sum of previous years as well as in relation to the discounted prior year cash flow. A factor that is > 1 implies a continuous potential of increase, related to the period under consideration.

After the employee cash flows are predicted, they can be introduced in the calculation scheme of the shareholder value, illustrated above. Now one can construe, if the education was appropriate in an economic sense respectively if the investment has amortised and is profitable.

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4 Summary: Berliner Balanced Scorecard Approach

This contribution is the final of four essays, which were published in the prior one and a half years in DStR. The first contribution tackled the 'New(er) Approach to a Quantified Combination and Index-linking of the Balanced Scorecard-Perspectives'.[12] The subsequent two contributions deepened the perspectives, namely with the titles 'Value Added Calculations as Instruments for Finance-oriented Components of Success and Personnel Analysis'[13] as well as 'About the Quantification of the Customer Perspective of the Balanced Scorecard'.[14]

From the beginning the authors wanted to show, that the perspectives of the Balanced Scorecard from *Kaplan* and *Norton* can be linked economically. By means of a performance approach, the shareholder value approach and a corporate appraisal, this approach can be index-linked over time. They aimed at illustrating, that each perspective of the BSC is calculable, transparent and designable by means of well-known instruments and techniques of the annual accounts, the controlling of costs, the financial controlling, the shareholder value approach up to the quality management as well as further fundamental considerations to business functions.

Statements, the Balanced Scorecard is not measurably cardinally and/or a strategy calculation up to the accounting or vice versa is not conceivable, which can be found constantly in the literature and even are fostered by consulting companies, has been disproved by these essays.

Of course, the contributions only show the tip of the iceberg. The combination, index-linking, and the depth of each perspective can be driven further and combined also differently by the Berliner Balanced Scorecard approach.

The authors consider necessary to give the complex and calculable approach an own name. Since the approach was developed in Berlin, they decided to choose the name 'Berliner Balanced Scorecard Approach'.

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Endnotes

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